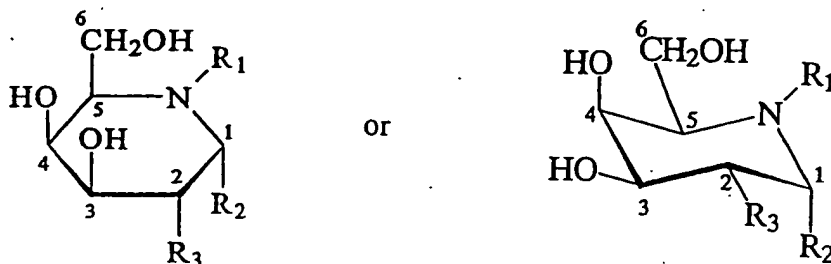


## IN THE CLAIMS

Please cancel claims 1-9. Please add new claims 10-48 as follows:

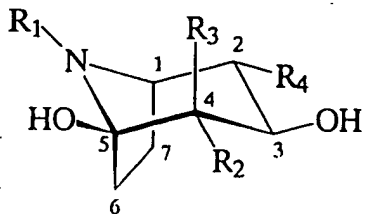
1-9. Canceled

10. (new) A method of treating Fabry disease comprising administering to an individual in need thereof an effective amount of a compound of the formula:



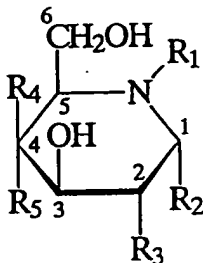
wherein R<sub>1</sub> represents H, CH<sub>3</sub>, or CH<sub>2</sub>CH<sub>3</sub>; and  
R<sub>2</sub> and R<sub>3</sub> independently represent H, OH, a simple sugar, a 1-3 carbon alkyl, alkoxyl, or hydroxyalkyl group.

11. (new) A method of treating Fabry disease comprising administering to an individual in need thereof an effective amount of a compound of the formula:



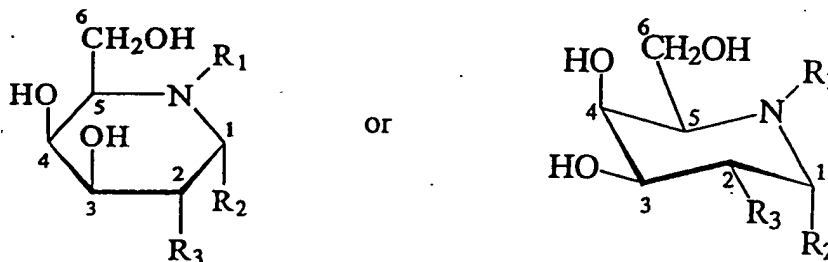
wherein for calystegine A<sub>3</sub>: R<sub>1</sub> = H, R<sub>2</sub> = OH, R<sub>3</sub> = H, R<sub>4</sub> = H;  
for calystegine B<sub>2</sub>: R<sub>1</sub> = H, R<sub>2</sub> = OH, R<sub>3</sub> = H, R<sub>4</sub> = OH;  
for calystegine B<sub>3</sub>: R<sub>1</sub> = H, R<sub>2</sub> = H, R<sub>3</sub> = OH, R<sub>4</sub> = OH; and  
for N-methyl-calystegine: R<sub>1</sub> = CH<sub>3</sub>, R<sub>2</sub> = OH, R<sub>3</sub> = H, R<sub>4</sub> = H.

12. (new) A method of treating Fabry disease comprising administering to an individual in need thereof an effective amount of a compound of the formula:



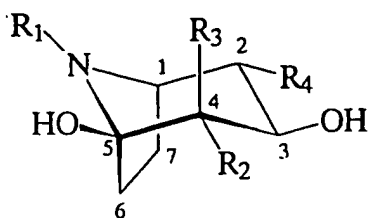
wherein  $R_1$  represents H,  $CH_3$ , or  $CH_2CH_3$ ;  
 $R_2$  and  $R_3$  independently represent H, OH, a 1-6 carbon alkyl, hydroxyalkyl, alkoxy, or a simple sugar; and  
 $R_4$  and  $R_5$  independently represent H or OH.

13. (new) A method of enhancing the activity of lysosomal  $\alpha$ -galactosidase A in a mammalian comprising administering an effective amount of a compound of the formula:



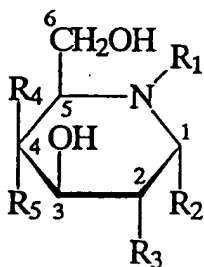
wherein  $R_1$  represents H,  $CH_3$ , or  $CH_2CH_3$ ; and  
 $R_2$  and  $R_3$  independently represent H, OH, a simple sugar, a 1-3 carbon alkyl, alkoxy, or hydroxyalkyl group.

14. (new) A method of enhancing the activity of lysosomal  $\alpha$ -galactosidase A in a mammalian comprising administering an effective amount of a compound of the formula:



wherein  
 for calystegine A<sub>3</sub>: R<sub>1</sub> = H, R<sub>2</sub> = OH, R<sub>3</sub> = H, R<sub>4</sub> = H;  
 for calystegine B<sub>2</sub>: R<sub>1</sub> = H, R<sub>2</sub> = OH, R<sub>3</sub> = H, R<sub>4</sub> = OH;  
 for calystegine B<sub>3</sub>: R<sub>1</sub> = H, R<sub>2</sub> = H, R<sub>3</sub> = OH, R<sub>4</sub> = OH; and  
 for N-methyl-calystegine: R<sub>1</sub> = CH<sub>3</sub>, R<sub>2</sub> = OH, R<sub>3</sub> = H, R<sub>4</sub> = H.

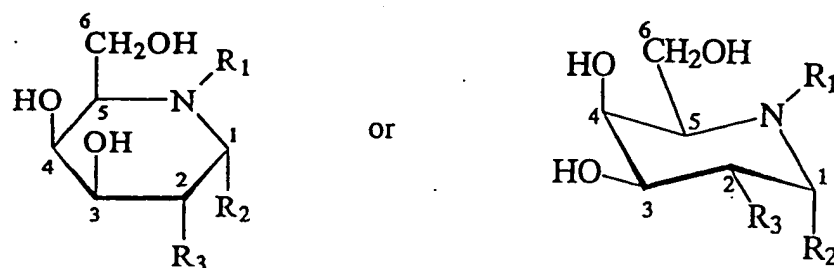
15. (new) A method of enhancing the activity of lysosomal  $\alpha$ -galactosidase A in a mammalian comprising administering an effective amount of a compound of the formula:



wherein  
 R<sub>1</sub> represents H, CH<sub>3</sub>, or CH<sub>2</sub>CH<sub>3</sub>;  
 R<sub>2</sub> and R<sub>3</sub> independently represent H, OH, a 1-6 carbon alkyl, hydroxyalkyl, alkoxy, or a simple sugar; and  
 R<sub>4</sub> and R<sub>5</sub> independently represent H or OH.

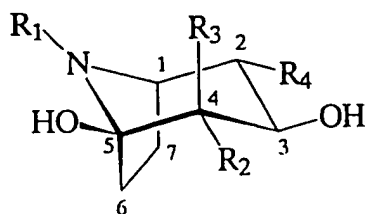
16. (new) A method of stabilizing lysosomal  $\alpha$ -galactosidase A in mammalian cells comprising administering an effective amount of a compound of formula:

16. (new) A method of stabilizing lysosomal  $\alpha$ -galactosidase A in mammalian cells comprising administering an effective amount of a compound of formula:



wherein R<sub>1</sub> represents H, CH<sub>3</sub>, or CH<sub>2</sub>CH<sub>3</sub>; and  
R<sub>2</sub> and R<sub>3</sub> independently represent H, OH, a simple sugar, a 1-3 carbon alkyl, alkoxy, or hydroxyalkyl group.

17. (new) A method of stabilizing lysosomal  $\alpha$ -galactosidase A in mammalian cells comprising administering an effective amount of a compound of formula:



wherein

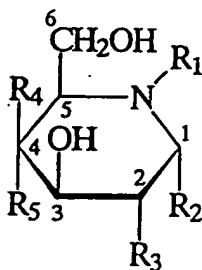
for calystegine A<sub>3</sub>: R<sub>1</sub> = H, R<sub>2</sub> = OH, R<sub>3</sub> = H, R<sub>4</sub> = H;

for calystegine B<sub>2</sub>: R<sub>1</sub> = H, R<sub>2</sub> = OH, R<sub>3</sub> = H, R<sub>4</sub> = OH;

for calystegine B<sub>3</sub>: R<sub>1</sub> = H, R<sub>2</sub> = H, R<sub>3</sub> = OH, R<sub>4</sub> = OH; and

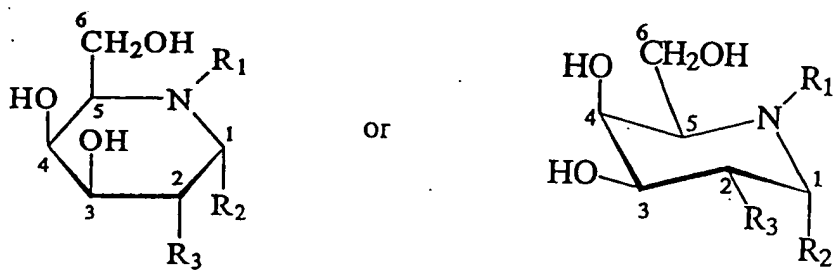
for N-methyl-calystegine: R<sub>1</sub> = CH<sub>3</sub>, R<sub>2</sub> = OH, R<sub>3</sub> = H, R<sub>4</sub> = H.

18. (new) A method of stabilizing lysosomal  $\alpha$ -galactosidase A in mammalian cells comprising administering an effective amount of a compound of formula:



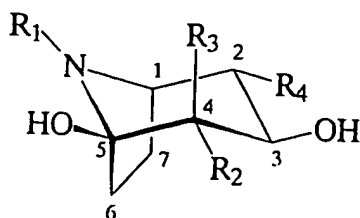
wherein  $R_1$  represents H,  $CH_3$ , or  $CH_2CH_3$ ;  
 $R_2$  and  $R_3$  independently represent H, OH, a 1-6 carbon alkyl, hydroxyalkyl, alkoxy, or a simple sugar; and  
 $R_4$  and  $R_5$  independently represent H or OH.

19. (new) A method of preventing the degradation of lysosomal  $\alpha$ -galactosidase A in a mammalian comprising administering an effective amount of a compound of the formula:



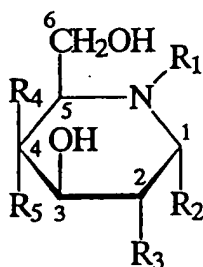
wherein  $R_1$  represents H,  $CH_3$ , or  $CH_2CH_3$ ; and  
 $R_2$  and  $R_3$  independently represent H, OH, a simple sugar, a 1-3 carbon alkyl, alkoxy, or hydroxyalkyl group.

20. (new) A method of preventing the degradation of lysosomal  $\alpha$ -galactosidase A in a mammalian comprising administering an effective amount of a compound of the formula:

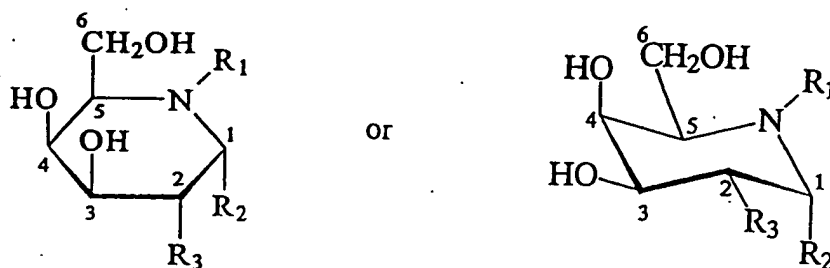


wherein for calystegine A<sub>3</sub>:  $R_1 = H$ ,  $R_2 = OH$ ,  $R_3 = H$ ,  $R_4 = H$ ;  
for calystegine B<sub>2</sub>:  $R_1 = H$ ,  $R_2 = OH$ ,  $R_3 = H$ ,  $R_4 = OH$ ;  
for calystegine B<sub>3</sub>:  $R_1 = H$ ,  $R_2 = H$ ,  $R_3 = OH$ ,  $R_4 = OH$ ; and

21. (new) A method of preventing the degradation of lysosomal  $\alpha$ -galactosidase A in a mammalian comprising administering an effective amount of a compound of the formula:

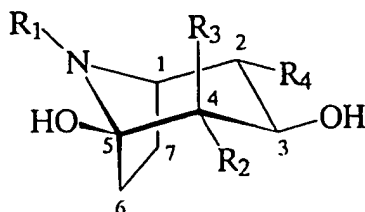


22. (new) A method of preventing deposition of neutral glycosphingolipids in vascular endothelial cells in an individual in need thereof, comprising administering an effective amount of a compound of formula:



{W:\04168\100J672-US2\00095487.DOC {00000000-0000-0000-0000-00000000} 7

23. (new) A method of preventing deposition of neutral glycosphingolipids in vascular endothelial cells in an individual in need thereof, comprising administering an effective amount of a calystegine compound of formula:



wherein

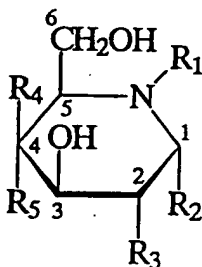
for calystegine A<sub>3</sub>: R<sub>1</sub> = H, R<sub>2</sub> = OH, R<sub>3</sub> = H, R<sub>4</sub> = H;

for calystegine B<sub>2</sub>: R<sub>1</sub> = H, R<sub>2</sub> = OH, R<sub>3</sub> = H, R<sub>4</sub> = OH;

for calystegine B<sub>3</sub>: R<sub>1</sub> = H, R<sub>2</sub> = H, R<sub>3</sub> = OH, R<sub>4</sub> = OH; and

for N-methyl-calystegine: R<sub>1</sub> = CH<sub>3</sub>, R<sub>2</sub> = OH, R<sub>3</sub> = H, R<sub>4</sub> = H.

24. (new) A method of preventing deposition of neutral glycosphingolipids in vascular endothelial cells in an individual in need thereof, comprising administering an effective amount of a compound of formula:



wherein R<sub>1</sub> represents H, CH<sub>3</sub>, or CH<sub>2</sub>CH<sub>3</sub>;  
R<sub>2</sub> and R<sub>3</sub> independently represent H, OH, a 1-6 carbon alkyl, hydroxyalkyl, alkoxy, or a simple sugar; and  
R<sub>4</sub> and R<sub>5</sub> independently represent H or OH.

25. (new) The method of claim 24, wherein the compound is selected from the group consisting of 1-deoxynojirimycin, 1-deoxygalactonojirimycin,  $\alpha$ -homonojirimycin, 3,4-diepi- $\alpha$ -homonojirimycin, and 4-*epi*-fagomine.

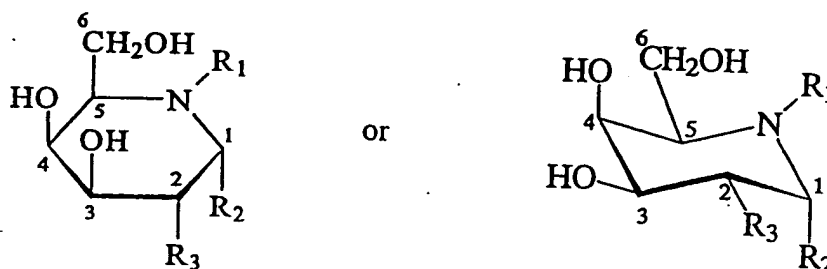
26. (new) The method of claim 25 wherein the compound is 1-deoxygalactonojirimycin.

27. (new) The method of claim 22, wherein the glycosphingolipids are predominantly ceramide trihexoside.

28. (new) The method of claim 23, wherein the glycosphingolipids are predominantly ceramide trihexoside.

29. (new) The method of claim 24, wherein the glycosphingolipids are predominantly ceramide trihexoside.

30. (new) A method of preventing renal failure associated with deposition of neutral glycosphingolipids in vascular endothelial cells in an individual in need thereof, comprising administering an effective amount of a compound comprising administering an effective amount of a compound of formula:

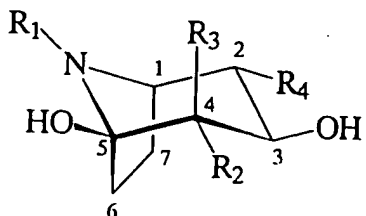


wherein R<sub>1</sub> represents H, CH<sub>3</sub>, or CH<sub>2</sub>CH<sub>3</sub>; and

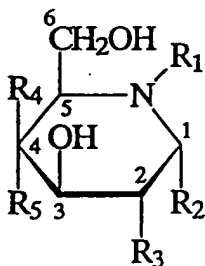
R<sub>2</sub> and R<sub>3</sub> independently represent H, OH, a simple sugar, a 1-3 carbon alkyl, alkoxyl, or hydroxy-alkyl group.



The diagram shows a bicyclic molecule, specifically a 1,2,3,4,5,6,7-heptamethylene-2,3-diol derivative. The structure consists of two fused five-membered rings. The bridgehead carbons are labeled 1 and 4. The carbon atoms are numbered 1 through 7. Substituents include R<sub>1</sub> on the nitrogen atom at position 2, R<sub>2</sub> on the carbon at position 4, R<sub>3</sub> on the carbon at position 1, and R<sub>4</sub> on the carbon at position 2. Hydroxyl groups (OH) are attached to the carbons at positions 3 and 5. The stereochemistry is indicated by wedge and dash bonds: the OH group at position 3 is on a wedge, the OH group at position 5 is on a dash, and the R<sub>2</sub> group at position 4 is on a wedge.



Chemical structure of a substituted piperidine ring. The ring is numbered 1 to 6. Carbon 1 is bonded to R<sub>2</sub>. Carbon 2 is bonded to R<sub>3</sub>. Carbon 3 is bonded to R<sub>5</sub>. Carbon 4 is bonded to R<sub>4</sub> and has an OH group. Carbon 5 is bonded to R<sub>1</sub> and has a CH<sub>2</sub>OH group. Carbon 6 is bonded to R<sub>1</sub> and has a CH<sub>2</sub>OH group.



33. (new) The method of claim 32, wherein the compound is selected from the group consisting of 1-deoxynojirimycin, 1-deoxygalactonojirimycin,  $\alpha$ -homonojirimycin, , 3,4-diepi- $\alpha$ -homonojirimycin, and 4-*epi*-fagomine.

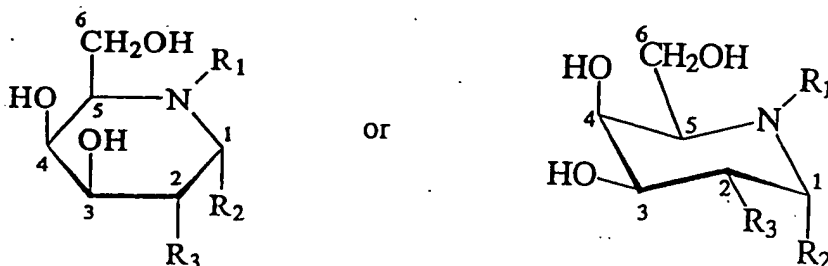
34. (new) The method of claim 33 wherein the compound is 1-deoxygalactonojirimycin.

35. (new) The method of claim 30, wherein the glycosphingolipids are predominantly ceramide trihexoside.

36. (new) The method of claim 31, wherein the glycosphingolipids are predominantly ceramide trihexoside.

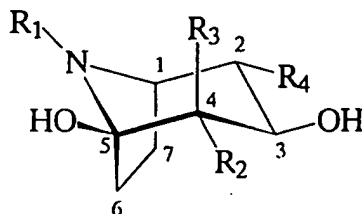
37. (new) The method of claim 32, wherein the glycosphingolipids are predominantly ceramide trihexoside.

38. (new) A method of preventing premature myocardial infarctions and strokes associated with deposition of neutral glycosphingolipids in vascular endothelial cells in an individual in need thereof, comprising administering an effective amount of a compound of formula:



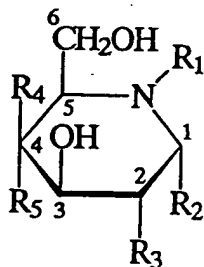
wherein R<sub>1</sub> represents H, CH<sub>3</sub>, or CH<sub>2</sub>CH<sub>3</sub>; and  
R<sub>2</sub> and R<sub>3</sub> independently represent H, OH, a simple sugar, a 1-3 carbon alkyl, alkoxyl, or hydroxy-alkyl group.

The diagram shows a bicyclic chemical structure, specifically a 1,2,3,4,5,6,7-heptacyclic system. The structure is drawn in a perspective view. It features a central ring system with several substituents and numbered positions. The substituents are labeled R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, and R<sub>4</sub>. The numbered positions are 1, 2, 3, 4, 5, 6, and 7. The structure includes a nitrogen atom (N) and two hydroxyl groups (OH). The numbering starts at the nitrogen atom (1), goes to the adjacent carbon (2), then to the carbon with R<sub>4</sub> (3), then to the carbon with R<sub>2</sub> (4), then to the carbon with R<sub>3</sub> (5), then to the carbon with R<sub>1</sub> (6), and finally to the carbon with R<sub>2</sub> (7). The hydroxyl groups are attached to the carbons at positions 1 and 4.



40. (new) A method of preventing premature myocardial infarctions and strokes associated with deposition of neutral glycosphingolipids in vascular endothelial cells in an individual in need thereof, comprising administering an effective amount of a compound of formula:

Chemical structure of a substituted piperidine ring. The ring is a six-membered saturated heterocycle with a nitrogen atom (N) at the top-right position. The carbons are numbered 1 through 5 in a clockwise direction starting from the carbon adjacent to the nitrogen. Substituents are attached to each carbon: C1 has R<sub>2</sub>, C2 has R<sub>3</sub>, C3 has R<sub>5</sub>, C4 has R<sub>4</sub> and an OH group, and C5 has R<sub>1</sub> and a CH<sub>2</sub>OH group. The CH<sub>2</sub>OH group is labeled with a superscript 6.



{W:\04168\100J672-US2\00095487.DOC 00000000000000000000000000000000 }12

41. (new) The method of claim 40, wherein the compound is selected from the group consisting of 1-deoxynojirimycin, 1-deoxygalactonojirimycin,  $\alpha$ -homonojirimycin, 3,4-diepi- $\alpha$ -homonojirimycin, and 4-*epi*-fagomine.

42. (new) The method of claim 41 wherein the compound is 1-deoxygalactonojirimycin.

43. (new) The method of claim 38, wherein the individual has the atypical variant form of Fabry disease.

44. (new) The method of claim 39, wherein the individual has the atypical variant form of Fabry disease.

45. (new) The method of claim 40, wherein the individual has the atypical variant form of Fabry disease.

46. (new) The method of claim 38, wherein the glycosphingolipids are predominantly ceramide trihexoside.

47. (new) The method of claim 39, wherein the glycosphingolipids are predominantly ceramide trihexoside.

48. (new) The method of claim 40, wherein the glycosphingolipids are predominantly ceramide trihexoside.